

## SEQUENCE LISTING

<110> BOWEN, MICHAEL A.  
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<120> POLYNUCLEOTIDE ENCODING AN ACTIVATED HUMAN  
T-LYMPHOCYTE-DERIVED PROTEIN RELATED TO UBIQUITIN  
CONJUGATING ENZYME

<130> D0034np

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<150> 60/308,706

<151> 2001-07-30

<150> 60/244,688

<151> 2000-10-30

<160> 55

<170> PatentIn Ver. 2.1

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<212> DNA

<213> Homo sapiens

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<222> (517)..(1782)

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gaccgcggcg gcggcgggcg cggcggcggc ggcggagccc ggagcgagg ccggaggctc 480
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Met Gln Gln Pro Gln Pro
1 5
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gcg gcg ccg ggg gcc ggg ggc ggc cca ggg ggg ggc ccg ggg ccg ggg	630
Ala Ala Pro Gly Ala Gly Gly Gly Pro Gly Gly Gly Pro Gly Pro Gly	
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Pro Cys Leu Arg Arg Glu Leu Lys Leu Leu Glu Ser Ile Phe His Arg	
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ggc cac gag cgc ttc cgc att gcc agc gcc tgc ctg gac gag ctg agc	726
Gly His Glu Arg Phe Arg Ile Ala Ser Ala Cys Leu Asp Glu Leu Ser	
55 60 65 70	
tgc gag ttc ctg ctg gct ggg gcc gga ggg gcc ggg gcg ggg gcc gcg	774
Cys Glu Phe Leu Leu Ala Gly Ala Gly Ala Gly Ala Gly Ala Ala	
75 80 85	
ccc gga ccg cat ctc ccc cca ccg ggg tgc gtg cct ggg gat cct gtc	822
Pro Gly Pro His Leu Pro Pro Arg Gly Ser Val Pro Gly Asp Pro Val	
90 95 100	
cgc atc cac tgc aac atc acg gag tca tac cct gct gtg ccc ccc atc	870
Arg Ile His Cys Asn Ile Thr Glu Ser Tyr Pro Ala Val Pro Pro Ile	
105 110 115	
tgg tgc gtg gag tct gat gac cct aac ttg gct gct gtc ttg gag agg	918
Trp Ser Val Glu Ser Asp Asp Pro Asn Leu Ala Ala Val Leu Glu Arg	
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ctg gtg gac ata aag aaa ggg aat act ctg cta ttg cag cat ctg aag	966
Leu Val Asp Ile Lys Lys Gly Asn Thr Leu Leu Leu Gln His Leu Lys	
135 140 145 150	
agg atc atc tcc gac ctg tgt aaa ctc tat aac ctc cct cag cat cca	1014
Arg Ile Ile Ser Asp Leu Cys Lys Leu Tyr Asn Leu Pro Gln His Pro	
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Asp Val Glu Met Leu Asp Gln Pro Leu Pro Ala Glu Gln Cys Thr Gln	
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gaa gac gtg tct tca gaa gat gaa gat gag gag atg cct gag gac aca	1110
Glu Asp Val Ser Ser Glu Asp Glu Asp Glu Glu Met Pro Glu Asp Thr	
185 190 195	
gaa gac tta gat cac tat gaa atg aaa gag gaa gag cca gct gag ggc	1158
Glu Asp Leu Asp His Tyr Glu Met Lys Glu Glu Glu Pro Ala Glu Gly	
200 205 210	
aag aaa tct gaa gat gat ggc att gga aaa gaa aac ttg gcc atc cta	1206
Lys Lys Ser Glu Asp Asp Gly Ile Gly Lys Glu Asn Leu Ala Ile Leu	
215 220 225 230	

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<210> 2

<211> 422

<212> PRT

<213> Homo sapiens

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 Gly Gly Pro Gly Pro Gly Pro Cys Leu Arg Arg Glu Leu Lys Leu Leu  
 35 40 45  
 Glu Ser Ile Phe His Arg Gly His Glu Arg Phe Arg Ile Ala Ser Ala  
 50 55 60  
 Cys Leu Asp Glu Leu Ser Cys Glu Phe Leu Leu Ala Gly Ala Gly Gly  
 65 70 75 80  
 Ala Gly Ala Gly Ala Ala Pro Gly Pro His Leu Pro Pro Arg Gly Ser  
 85 90 95  
 Val Pro Gly Asp Pro Val Arg Ile His Cys Asn Ile Thr Glu Ser Tyr  
 100 105 110  
 Pro Ala Val Pro Pro Ile Trp Ser Val Glu Ser Asp Asp Pro Asn Leu  
 115 120 125  
 Ala Ala Val Leu Glu Arg Leu Val Asp Ile Lys Lys Gly Asn Thr Leu  
 130 135 140  
 Leu Leu Gln His Leu Lys Arg Ile Ile Ser Asp Leu Cys Lys Leu Tyr  
 145 150 155 160  
 Asn Leu Pro Gln His Pro Asp Val Glu Met Leu Asp Gln Pro Leu Pro  
 165 170 175  
 Ala Glu Gln Cys Thr Gln Glu Asp Val Ser Ser Glu Asp Glu Asp Glu  
 180 185 190  
 Glu Met Pro Glu Asp Thr Glu Asp Leu Asp His Tyr Glu Met Lys Glu  
 195 200 205  
 Glu Glu Pro Ala Glu Gly Lys Lys Ser Glu Asp Asp Gly Ile Gly Lys  
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<213> Caenorhabditis elegans
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    20             25             30
Asp Glu Leu Ser Met Lys Phe Ile Asn Ala Glu Asn Lys Gly Ile Ile
    35             40             45
Val Thr Ala Asn Ile Gln Glu Asn Tyr Pro Arg Gln Pro Pro Ile Trp
    50             55             60
Phe Ser Glu Ser Asp Asp Val Pro Val Ile Gly Met Ser Leu Gln Arg
    65             70             75             80

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Leu	Thr	Glu	Thr	Glu	Glu	Ser	Thr	Asn	Ile	Leu	His	Gln	Val	His	Arg	
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Leu	Pro	Gln	Ile	Ala	Pro	Pro	Val	Arg	Asp	Asp	Ile	Asp	Glu	Gly	Arg	
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Gly	Ser	Asp	Ile	Ser	Asp	Thr	Thr	Ser	Glu	Pro	Ile	Asp	Asp	Asp	Met	
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Ala	Gly	Asp	Gly	Glu	Val	Asp	Asp	Asp	Asp	Glu	Glu	Glu	Asp	Asp		
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Glu	Asp	Ala	Asp	Gly	Asp	Ile	Glu	Ile	Val	Glu	Met	Ala	Glu	Glu	Asp	
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Pro	Thr	Ser	Gln	His	Asp	Val	Gly	Val	Ser	Lys	Glu	Gly	Leu	Asp	Met	
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Leu	Asp	Lys	Val	Ser	Lys	Ile	Asn	Arg	Gln	Gln	His	Leu	Asp	Gly	Lys	
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Val	Gln	Gly	Ser	Ile	Thr	Ala	Thr	Asp	Arg	Leu	Met	Lys	Glu	Ile	Arg	
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Asp	Ile	His	Arg	Ser	Glu	His	Phe	Lys	Asn	Gly	Ile	Tyr	Thr	Phe	Glu	
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Leu	Glu	Lys	Glu	Glu	Asn	Leu	Tyr	Gln	Trp	Trp	Ile	Lys	Leu	His	Lys	
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Gln	Gly	Phe	Val	Leu	Gly	Gly	Gly	Ala	Ile	Cys	Met	Glu	Leu	Leu	Thr	
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Lys	Gln	Gly	Trp	Ser	Ser	Ala	Tyr	Ser	Ile	Glu	Ser	Cys	Ile	Leu	Gln	
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Thr Pro Ser Ser His Phe Phe Ala Leu Leu Val Phe Phe Leu His  
385 390 395 400

Ser Asp Asp Phe Phe Phe Asn Gly Phe Leu Lys Ser Glu Thr Phe Thr  
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Phe Phe Lys Leu Ser Phe Arg Gly Tyr Ile Ser Ser Leu Val Leu Tyr  
420 425 430

Ser Phe Ser Arg His Leu His His Pro Phe Phe Thr Arg Phe Leu Ile  
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<210> 4  
<211> 397  
<212> PRT  
<213> *Drosophila melanogaster*

<400> 4  
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20 25 30

Asp Glu Leu Leu Cys Arg Phe Ile Asp Lys Asn Gly Lys Arg Tyr Asp  
35 40 45

Ile His Ala Asn Ile Thr Glu Thr Tyr Pro Ser Ser Pro Pro Val Trp  
50 55 60

Phe Ala Glu Ser Glu Glu Thr Ser Val Thr Asn Ala Val Gln Ile Leu  
65 70 75 80

Ser Asn Thr Asn Gly Arg Asp Asn His Val Ile Asn Gln Val Gly Ile  
85 90 95

Leu Leu Arg Glu Leu Cys Arg Leu His Asn Val Pro Leu Pro Pro Asp  
100 105 110

Ile Asp Asn Leu Ala Leu Pro Leu Gln Thr Pro Pro Ser Ala Ser  
115 120 125

Pro Leu Arg Cys Glu Gln Arg Pro Gly Gly Gly Ala Gly Gly Gly  
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Gly Gly Pro His Gly Asn Glu Glu Thr Asp Ser Asp Gln Glu Glu Ile  
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Glu Asp Pro Ile Gly Glu Ser Glu Gln Glu Ser Glu Gly Asp Glu Asp  
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<212> PRT
<213> Mus musculus
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      20              25              30
Glu Glu Gln Glu Glu Arg Lys Pro Ser Ala Thr Gln Gln Lys Lys Asn
      35              40              45
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Cys	Ser	Ala	Gly	Pro	Lys	Gly	Asp	Asn	Ile	Tyr	Glu	Trp	Arg	Ser	Thr
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Ile	Leu	Gly	Pro	Pro	Gly	Ser	Val	Tyr	Glu	Gly	Gly	Val	Phe	Phe	Leu
		100						105					110		
Asp	Ile	Thr	Phe	Ser	Ser	Asp	Tyr	Pro	Phe	Lys	Pro	Pro	Lys	Val	Thr
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Cys	Leu	Asp	Ile	Leu	Lys	Asp	Asn	Trp	Ser	Pro	Ala	Leu	Thr	Ile	Ser
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Lys	Val	Leu	Leu	Ser	Ile	Cys	Ser	Leu	Leu	Thr	Asp	Cys	Asn	Pro	Ala
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Asp	Pro	Leu	Val	Gly	Ser	Ile	Ala	Thr	Gln	Tyr	Leu	Thr	Asn	Arg	Ala
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<212> PRT															
<213> Homo sapiens															
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			20					25					30		
Asp	Glu	Asn	Phe	Thr	Glu	Leu	Arg	Gly	Glu	Ile	Ala	Gly	Pro	Pro	Asp
		35					40					45			
Thr	Pro	Tyr	Glu	Gly	Gly	Arg	Tyr	Gln	Leu	Glu		Lys	Ile	Pro	Glu
	50					55					60				
Thr	Tyr	Pro	Phe	Asn	Pro	Pro	Lys	Val	Arg	Phe	Ile	Thr	Lys	Ile	Trp
	65				70					75					80
His	Pro	Asn	Ile	Ser	Ser	Val	Thr	Gly	Ala	Ile	Cys	Leu	Asp	Ile	Leu
				85					90					95	
Lys	Asp	Gln	Trp	Ala	Ala	Ala	Met	Thr	Leu	Arg	Thr	Val	Leu	Leu	Ser
			100					105					110		

Leu Gln Ala Leu Leu Ala Ala Ala Glu Pro Asp Asp Pro Gln Asp Ala  
115 120 125

Val Val Ala Asn Gln Tyr Lys Gln Asn Pro Glu Met Phe Lys Gln Thr  
130 135 140

Ala Arg Leu Trp Ala His Val Tyr Ala Gly Ala Pro Val Ser Ser Pro  
145 150 155 160

Glu Tyr Thr Lys Lys Ile Glu Asn Leu Cys Ala Met Gly Phe Asp Arg  
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Asn Ala Val Ile Val Ala Leu Ser Ser Lys Ser Trp Asp Val Glu Thr  
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Ala Thr Glu Leu Leu Leu Ser Asn  
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<210> 7

<211> 199

<212> PRT

<213> *Drosophila melanogaster*

<400> 7

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20 25 30

Asn Asp Ser Trp Thr Glu Leu Arg Gly Glu Ile Ala Gly Pro Pro Asp  
35 40 45

Thr Pro Tyr Glu Gly Lys Phe Val Leu Glu Ile Lys Val Pro Glu  
50 55 60

Thr Tyr Pro Phe Asn Pro Pro Lys Val Arg Phe Ile Thr Arg Ile Trp  
65 70 75 80

His Pro Asn Ile Ser Ser Val Thr Gly Ala Ile Cys Leu Asp Ile Leu  
85 90 95

Lys Asp Asn Trp Ala Ala Ala Met Thr Leu Arg Thr Val Leu Leu Ser  
100 105 110

Leu Gln Ala Leu Leu Ala Ala Ala Glu Pro Asp Asp Pro Gln Asp Ala  
115 120 125

Val Val Ala Tyr Gln Phe Lys Asp Lys Tyr Asp Leu Phe Leu Leu Thr  
130 135 140

Ala Lys His Trp Thr Asn Ala Tyr Ala Gly Gly Pro His Thr Phe Pro  
145 150 155 160

Asp Cys Asp Ser Lys Ile Gln Arg Leu Arg Asp Met Gly Ile Asp Glu  
165 170 175

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His Glu Ala Arg Ala Val Leu Ser Lys Glu Asn Trp Asn Leu Glu Lys  
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Ala Thr Glu Gly Leu Phe Ser  
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<210> 8

<211> 295

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<213> *Saccharomyces cerevisiae*

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20 25 30

Leu Glu Asp Asp Ser Asn Ile Phe Thr Trp Asn Ile Gly Val Met Val  
35 40 45

Leu Asn Glu Asp Ser Ile Tyr His Gly Gly Phe Phe Lys Ala Gln Met  
50 55 60

Arg Phe Pro Glu Asp Phe Pro Phe Ser Pro Pro Gln Phe Arg Phe Thr  
65 70 75 80

Pro Ala Ile Tyr His Pro Asn Val Tyr Arg Asp Gly Arg Leu Cys Ile  
85 90 95

Ser Ile Leu His Gln Ser Gly Asp Pro Met Thr Asp Glu Pro Asp Ala  
100 105 110

Glu Thr Trp Ser Pro Val Gln Thr Val Glu Ser Val Leu Ile Ser Ile  
115 120 125

Val Ser Leu Leu Glu Asp Pro Asn Ile Asn Ser Pro Ala Asn Val Asp  
130 135 140

Ala Ala Val Asp Tyr Arg Lys Asn Pro Glu Gln Tyr Lys Gln Arg Val  
145 150 155 160

Lys Met Glu Val Glu Arg Ser Lys Gln Asp Ile Pro Lys Gly Phe Ile  
165 170 175

Met Pro Thr Ser Glu Ser Ala Tyr Ile Ser Gln Ser Lys Leu Asp Glu  
180 185 190

Pro Glu Ser Asn Lys Asp Met Ala Asp Asn Phe Trp Tyr Asp Ser Asp  
195 200 205

Leu Asp Asp Asp Glu Asn Gly Ser Val Ile Leu Gln Asp Asp Asp Tyr  
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Asp Asp Gly Asn Asn His Ile Pro Phe Glu Asp Asp Asp Val Tyr Asn  
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<210> 9
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 9
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<210> 10
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 10
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21

<210> 11
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

<400> 11
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<210> 12
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<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
oligonucleotide

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<223> Description of Artificial Sequence: Primer

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<210> 14  
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<210> 15  
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<210> 16  
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<212> DNA  
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<223> Description of Artificial Sequence: Primer

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<212> PRT  
<213> Homo sapiens

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 20 25 30  
 Val Glu Ser Asp Asp Pro Asn Leu Ala Val Leu Glu Arg Leu Val  
 35 40 45  
 Asp Ile Lys Lys Gly Asn Thr Leu Leu Leu Gln His Leu Lys Arg Ile  
 50 55 60  
 Ile Ser Asp Leu Cys Lys Leu Tyr Asn Leu Pro Gln His Pro Asp Val  
 65 70 75 80  
 Glu Met Leu Asp Gln Pro Leu Pro Ala Glu Gln Cys Thr Gln Glu Asp  
 85 90 95  
 Val Ser Ser Glu Asp Glu Asp Glu Glu Met Pro Glu Asp Thr Glu Asp  
 100 105 110  
 Leu Asp His Tyr Glu Met Lys Glu Glu Glu Pro Ala Glu Gly Lys Lys  
 115 120 125  
 Ser Glu Asp Asp Gly Ile Gly Lys Glu Asn Leu Ala Ile Leu Glu Lys  
 130 135 140  
 Ile Lys Lys Asn Gln Arg Gln Asp Tyr Leu Asn Gly Ala Val Ser Gly  
 145 150 155 160  
 Ser Val Gln Ala Thr Asp Arg Leu Met Lys Glu Leu Arg Asp Ile Tyr  
 165 170 175  
 Arg Ser Gln Ser Phe Lys Gly Gly Asn Tyr Ala Val Glu Leu Val Asn  
 180 185 190  
 Asp Ser Leu Tyr Asp Trp Asn Val Lys Leu Leu Lys Val Asp Gln Asp  
 195 200 205  
 Ser Ala Leu His Asn Asp Leu Gln Ile Leu Lys Glu Lys Glu Gly Ala  
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 Pro Pro Phe Val Arg  
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<210> 18  
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 <213> Homo sapiens

<400> 18  
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<210> 19  
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<400> 19  
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<210> 20  
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<400> 20  
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<210> 21  
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 <212> PRT  
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<400> 21  
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<210> 22  
 <211> 14  
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<400> 22  
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<210> 23  
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 <212> PRT  
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<400> 23  
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<210> 24  
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<400> 31  
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<210> 32  
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<210> 33  
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<210> 34  
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 Gln Leu Gly Gly Gln Gly Ala Ala Pro Gly Ala Gly Gly Gly Pro Gly  
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<210> 36  
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<400> 36  
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<210> 37  
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<400> 37  
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<210> 38  
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<400> 38  
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<210> 39  
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<400> 39  
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<210> 40  
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<400> 40  
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<210> 41  
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<400> 41  
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<400> 42  
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<400> 44  
Gly Tyr Val Leu Gly Gly Gly Ala Ile Cys Met Glu Leu Leu Thr Lys  
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<400> 45  
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 Asn Asp Ser Leu Tyr Asp Trp Asn Val Lys Leu Leu Lys Val Asp Gln  
 35 40 45  
 Asp Ser Ala Leu His Asn Asp Leu Gln Ile Leu Lys Glu Lys Glu Gly  
 50 55 60  
 Ala Asp Phe Ile Leu Leu Asn Phe Ser Phe Lys Asp Asn Phe Pro Phe  
 65 70 75 80  
 Asp Pro Pro Phe Val Arg Val Val Ser Pro Val Leu Ser Gly Gly Tyr  
 85 90 95  
 Val Leu Gly Gly Gly Ala Ile Cys Met Glu Leu Leu Thr Lys Gln Gly  
 100 105 110  
 Trp Ser Ser Ala Tyr Ser Ile Glu Ser Val Ile Met Gln Ile Ser Ala  
 115 120 125  
 Thr Leu Val Lys Gly Lys Ala Arg Val Gln Phe Gly Ala Asn Lys Ser  
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<220>  
 <223> Description of Artificial Sequence: Primer

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20

<210> 50  
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<210> 51  
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<210> 53  
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